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I CLAIM:

1. A method for establishing a communication link from a first processing unit located in a first network to a second processing unit located in a second network, through a wireless network comprising a plurality of nodes, said method comprising:

    in a first gateway, selecting one of a plurality of dynamic routes between the nodes to access a second gateway, the first gateway adapted for accessing the wireless network and said first processing unit, the second gateway adapted for accessing the wireless network and said second processing unit; and

    establishing a tunnel between the first gateway and the second gateway using the selected route to thereby establish said communication link.

2. The method as claimed in claim 1, further comprising generating said plurality of dynamic routes using each of said plurality of nodes.

3. The method as claimed in claim 2, wherein said generating is performed in response to a broadcast performed by said first gateway.

4. The method as claimed in claim 2, wherein said generating of said plurality of dynamic routes is performed randomly in time.

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5.   The method as claimed in claim 2, wherein said generating comprises, for a given node, detecting a neighboring node to said given node, collecting data identifying said detected neighboring node and transmitting to the first gateway said data identifying said detected neighboring node with data identifying said given node to generate said plurality of dynamic routes.

6.   The method as claimed in claim 5, further comprising performing a broadcast from said first gateway, wherein said generating is performed in response to said broadcast.

7.   The method as claimed in claim 5, wherein said generating of said plurality of dynamic routes is performed randomly in time.

8.   The method as claimed in claim 5, wherein said generating comprises detecting a first set of neighboring nodes to said given node and detecting a second set of neighboring nodes to each neighboring node of said first set of neighboring nodes.

9.   The method as claimed in claim 5, further comprising selecting at least one part of said transmitted data identifying said detected neighboring node using said data identifying said given node according to a criteria.

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10. The method as claimed in claim 9, wherein said criteria comprises at least one of bandwidth, reliability of each of said node and cost of using each of said node.

11. The method as claimed in claim 1, wherein said selecting of one of the routes in the first gateway is performed according to a criteria.

12. The method as claimed in claim 11, wherein said criteria comprises at least one of bandwidth, reliability of each of said node and cost of using each of said node.

13. The method as claimed in claim 1, wherein said establishing a tunnel comprises establishing an encrypted tunnel.

14. The method as claimed in claim 1, wherein said first network comprises one of a wide area network (WAN) and a local area network (LAN).

15. The method as claimed in claim 14, wherein said first network comprises the Internet.

16. An apparatus for transmitting data between a first processing unit located on a first network and a wireless network processing unit located on a wireless network comprising a plurality of wireless network processing units, said apparatus comprising:

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a memory for storing a plurality of dynamically established routes between each wireless network processing unit of said plurality of wireless network processing units;

a wireless module adapted to transmit a wireless signal to a given wireless network processing unit of the wireless network in accordance with one of said plurality of routes;

a network adapter adapted to receive a first processing unit signal from said first processing unit; and

a processor connected to said memory, to said wireless module and to said network adapter, said processor adapted to encapsulate said first processing unit signal into said wireless signal to provide at least one part of said first processing unit signal to said second processing unit according to one of said routes.

17. The apparatus as claimed in claim 16, wherein said wireless module comprises a point to point wireless communication module.

18. The apparatus as claimed in claim 16, wherein said processor is further adapted to encrypt said first processing unit signal to provide an encrypted first processing unit signal which is further encapsulated into said wireless signal to provide said first processing unit signal to said second processing unit.

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19.   The apparatus as claimed in claim 16, wherein said
      memory comprises a volatile memory comprising said
      plurality of dynamically established routes between
      each wireless network processing unit of said plurality
      of wireless network processing units.

20.   The apparatus as claimed in claim 16, wherein said
      network adapter comprises an Ethernet compatible
      network adapter.

21.   In a wireless network, a wireless network processing
      unit adapted for transmitting data between a first
      processing unit located on a first network to a second
      processing unit located on a second network via a first
      gateway and a second gateway, said first and second
      gateways having access to said wireless network
      processing unit, said wireless network processing unit
      comprising:

      a wireless module receiving an encapsulated wireless
         signal provided by one of a neighboring wireless
         network processing unit and said first gateway and
         providing an encapsulated signal;

      a data providing unit providing data outside said
         wireless network processing unit;

      a memory for storing an indication of a destination for
         said encapsulated signal; and

      a processing unit connected to said wireless module, to
         said data providing unit and to said memory, said
         processing unit receiving said encapsulated signal

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and providing at least one part of the encapsulated
signal to said data providing unit according to
said indication for providing said encapsulated
data.

22.   The wireless network processing unit as claimed in
      claim 21, wherein said data providing unit comprises a
      wireless module for providing said at least one part of
      the encapsulated signal to another neighboring wireless
      network processing unit.

23.   The wireless network processing unit as claimed in
      claim 21, wherein said data providing unit comprises a
      network adapter adapted to provide said at least one
      part of said encapsulated signal to at least one
      processing unit.

24.   The wireless node as claimed in claim 21, wherein said
      data providing unit comprises a communication port
      adapted to provide said at least one part of the
      encapsulated signal to a local computer.